CLAIMS

1. Nucleic material, in isolated or purified state, comprising a nucleotide sequence chosen from the group which consists of (i) the sequences
SEQ ID NO: 112, SEQ ID NO: 114; SEQ ID NO: 117,
SEQ ID NO: 120, SEQ ID NO: 124, SEQ ID NO: 130,
SEQ ID NO: 141 and SEQ ID NO: 142; (ii) the sequences complementary to sequences (i); and (iii) the sequences equivalent to sequences (i) or (ii), in particular the sequences having, for every series of 100 contiguous monomers, at least 50%, and preferentially at least 70% homology with sequences (i) or (ii) respectively.

2. Nucleic material, in isolated or purified state, encoding a polypeptide having, for every contiguous series of at least 30 amino acids, at least 50%, and preferably at least 70% homology with a peptide sequence chosen from the group which consists of SEQ ID NO: 113, SEQ ID NO: 115, SEQ ID NO: 118, SEQ ID NO: 121, SEQ ID NO: 135 and SEQ ID NO: 137.

3. Retroviral nucleic material, whose pol gene comprises a nucleotide sequence identical or equivalent to a sequence chosen from the group which consists of SEQ ID NO: 112, SEQ ID NO: 124 and their complementary sequences.

4. Retroviral nucleic material, in which the 5' end of the pol gene starts at nucleotide 1419 of SEQ ID NO: 130.

5. Retroviral nucleic material, in which the pol gene encodes a polypeptide having, for every contiguous series of at least 30 amino acids, at least 50%, and preferably at least 70% homology with the peptide sequence SEQ ID NO: 113.

6. Retroviral nucleic material, in which the 3' end of the gag gene ends at nucleotide 1418 of SEQ ID NO: 130.

7. Retroviral nucleic material, in which the env gene comprises a nucleotide sequence identical or

equivalent to a sequence chosen from the group which consists of SEQ ID NO: -117, and its complementary sequences.

8. Retroviral nucleic material, in which the env gene comprises a nucleotide sequence which starts at nucleotide 1 of SEQ ID NO: 117 and ends at nucleotide at nucleotide [sic] 233 of SEQ ID NO: 114.

9. Retroviral nucleic material, in which the env gene encodes a polypeptide having, for every contiguous series of at least 30 amino acids, at least 50%, and preferably at least 70% homology with the sequence SEQ ID NO: 118.

10. Retroviral nucleic material in which the U3R region of the 3' LTR comprises a nucleotide sequence which ends at nucleotide 617 of SEQ ID NO: 114.

11. Retroviral nucleic material in which the RU5 region of the 5' LTR comprises a nucleotide sequence which starts at nucleotide 755 of SEQ ID NO: 120 and ends at nucleotide 337 of SEQ ID NO: 141 or SEQ ID NO: 142.

12. Retroviral nucleic material comprising a sequence which starts at nucleotide 755 of SEQ ID NO: 120 and which ends at nucleotide 617 of SEQ ID NO: 114.

13. Retroviral nucleic material according to ~~any one of the preceding claims~~ claim 3, characterized in that it is associated with at least one autoimmune disease such as multiple sclerosis or rheumatoid arthritis.

~~14. Nucleotide fragment comprising a nucleotide sequence chosen from the group which consists of (i) the sequences SEQ ID NO: 112, SEQ ID NO: 114, SEQ ID NO: 117, SEQ ID NO: 120, SEQ ID NO: 124, SEQ ID NO: 130, SEQ ID NO: 141 and SEQ ID NO: 142; (ii) the sequences complementary to sequences (i); and (iii) the sequences equivalent to sequences (i) or (ii), in particular the sequences having, for every series of 100 contiguous monomers, at least 50%, and preferentially at least 70% homology with sequences (i) or (ii) respectively.~~

REPLACEMENT SHEET (RULE 26)

15. Nucleotide fragment according to Claim 14, consisting of a nucleotide sequence chosen from the group which consists of (i) the sequences SEQ ID NO: 112, SEQ ID NO: 114, SEQ ID NO: 117, SEQ ID NO: 120, SEQ ID NO: 124, SEQ ID NO: 130, SEQ ID NO: 141 and SEQ ID NO: 142; (ii) the sequences complementary to sequences (i); and (iii) the sequences equivalent to sequences (i) or (ii), in particular the sequences having, for every series of 100 contiguous monomers, at least 50%, and preferentially at least 70% homology with sequences (i) or (ii) respectively.

16. Nucleotide fragment comprising a nucleotide sequence encoding a polypeptide having, for every contiguous series of at least 30 amino acids, at least 50%, and preferably at least 70% homology with a peptide sequence chosen from the group which consists of SEQ ID NO: 113, SEQ ID NO: 115, SEQ ID NO: 118, SEQ ID NO: 121, SEQ ID NO: 135 and SEQ ID NO: 137.

17. Nucleotide fragment according to claim 16, consisting of a nucleotide sequence encoding a polypeptide having, for every contiguous series of at least 30 amino acids, at least 50%, and preferably at least 70% homology with a peptide sequence chosen from the group which consists of SEQ ID NO: 113, SEQ ID NO: 115, SEQ ID NO: 118, SEQ ID NO: 121, SEQ ID NO: 135 and SEQ ID NO: 137.

18. Nucleic probe for the detection of a retrovirus associated with multiple sclerosis and/or rheumatoid arthritis, characterized in that it is capable of hybridizing specifically with any fragment according to a Claim 14 any one of claims 14 to 17, belonging to the genome of said retrovirus.

19. Probe according to claim 18, characterized in that it possesses from 10 to 100 nucleotides, preferably from 10 to 30 nucleotides.

20. Primer for the amplification, by polymerization, of an RNA or of a DNA of a retrovirus associated with multiple sclerosis and/or rheumatoid

arthritis, characterized in that it comprises a nucleotide sequence identical or equivalent, to at least a portion of the nucleotide sequence of a fragment *a* according to ~~any one of claims 8 to 11~~, *claim 8* in particular a

5 nucleotide sequence having, for every series of 10 contiguous monomers, at least 50%, preferably at least 70% homology with at least said portion of said fragment.

21. Primer according to claim 20, characterized in

10 that its nucleotide sequence is chosen from SEQ ID NO: 116, SEQ ID NO: 119, SEQ ID NO: 122, SEQ ID NO: 123, SEQ ID NO: 126, SEQ ID NO: 127, SEQ ID NO: 128, SEQ ID NO: 129, SEQ ID NO: 132, and SEQ ID NO: 133.

15 22. RNA or DNA, and in particular replication and/or expression vector, comprising a genomic fragment *a* of the nucleic material according to ~~any one of claims~~ *claim 1* *a* ~~1 to 7 or a fragment according to~~ any one of claims 14 *a* ~~to 17~~.

20 23. Peptide encoded by any open reading frame *a* belonging to a nucleotide fragment according to ~~any one~~ *claim 14* *a* ~~of claims 14 to 17~~, in particular a polypeptide, for example oligopeptide forming or comprising an antigenic determinant recognized by sera of patients infected

25 with the MSRV-1 virus, and/or in whom the MSRV-1 virus has been reactivated.

24. Peptide according to claim 23 comprising a sequence identical, partially or completely, or equivalent to a sequence chosen from SEQ ID NO: 113,

30 SEQ ID NO: 115, SEQ ID NO: 118, SEQ ID NO: 121, SEQ ID NO: 135 and SEQ ID NO: 137.

25. Diagnostic, prophylactic or therapeutic composition, in particular for inhibiting the expression of at least one retrovirus associated with

35 multiple sclerosis and/or rheumatoid arthritis, *a* comprising a nucleotide fragment according to ~~any one~~ *claim 14* *a* ~~of claims 14 to 17~~.

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26.   Method for detecting a retrovirus associated
with multiple sclerosis and/or rheumatoid arthritis, in
a biological sample, characterized in that an RNA
and/or a DNA assumed to belong to or obtained from said
retrovirus, or their complementary RNA and/or DNA, is
brought into contact with a composition comprising a
a nucleotide fragment according to ~~any one of claims 14~~ Claim 14
a ~~to 17~~.

Sub.D4

add D5